Make Copy

GB1025S383A51976

SANTA CLARA VALLEY WATER DISTRICT
LIBRARY
5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118

REPORT UPON

GROUND WATER CONDITIONS
within the

SOUTH SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

1976?

SSCVWCD SOUTH COUNTY WATER

MICHAEL SHEEHY
OPERATIONS ENGINEER

GB
1025
S383.A5
v.1976

INTRODUCTION:

Section 75560 of the Water Code requires that "The district shall annually cause to be made an engineering investigation and report upon ground water conditions of the district". The following report and data is submitted in accordance with the code.

RAINFALL AND RESERVOIR STORAGE:

Due to the heavy above average rainfall in the Spring of 1974 (the recorded rainfall at the Uvas Reservoir was 125% of its 12 year average rainfall while the Elmer Chesbro Reservoir obtained 124% of its 12 year average) the 1974-75 water year began with large volumes of water being stored in the District's reservoirs. The Uvas Reservoir contained 8500 Acre-Feet (AF) (85% capacity) and the Chesbro Reservoir contained 7200 AF (89% capacity) on July 1, 1974. (For the purposes of this report, a water year is defined as that period starting on July 1 and ending the following June 30.) Due to the lack of early rainfall in the Fall of 1974, the reservoir volumes were drawn down until the end of January, to 2450 AF (30% capacity) at the Chesbro and 1400 AF (14% capacity) at the Uvas.

The rainfall for the 1974-75 water year occurred primarily within the months of February through March, 1975. These late rains filled both reservoirs and caused the Uvas to flow over its spillway, with the reservoirs remaining at capacity until the beginning of May.

TOTAL WATER PRODUCTION:

With the heavy rains experienced just prior to the 1974-75 water year, it may be assumed that the total average annual yield for the District, 63,000 AF, was exceeded. The amount of the natural ground water replenishment within the District has been established as 49,500 AF. The usable releases from the two District reservoirs for the 74-75 water year was 16,500 AF. The total amount of water percolated for the 1974-75 water year is the sum of these yields, or 66,000 AF.

In order to determine the total amount of water pumped from the ground water supplies of the district, a comparison must be made between the "depth-to-water" for the highest elevation the ground water reached in the 74-75 water year and the highest elevation reached in the 73-74 water year. The highest elevation reached in April of the 74-75 water year was 2 feet lower than the previous April, the peak reached in the 73-74 water year. This tends to point that more water was pumped from the ground water than was percolated. When one adds this deficit to the amount percolated, the total amount of water produced is found to have been approximately 69,000 AF.

ANNUAL OVERDRAFT:

The Water Code, in Section 75506, defines annual overdraft as the amount by which production of water from the ground water supplies during the water year exceeded the natural replenishment of such ground water supplies in that water year.

As stated previously, the total amount of water produced was

69,000 AF, while the natural replenishment of the ground water supplies was 49,500 AF. The difference between these figures is the annual overdraft for the 1974-75 water year, being 19,500 AF. The two District reservoirs made up 16,500 AF of this overdraft, leaving a total deficit of water within the District of 3,000 AF.

ACCUMULATED OVERDRAFT:

Section 75505 of the Water Code defines accumulated overdraft as the amount of water necessary to be replaced to the ground water to prevent subsidence of the land within the district.

Even though there was a marginal overdraft this preceding water year, it should be realized that the minimum "depth-to-water" measured in April 1975 was the second highest peak reached in more than 15 years, and the maximum "depth-to-water" measured in August was the highest maximum depth measured since the water year 1969-70.

This leads one to believe there has been a recovery from previous years where there had been more massive overdrafts of the ground water, such as that experienced in the 71-72 water year. It is therefore believed that no accumulated overdraft exists in the District at present.

ANNUAL OVERDRAFT: Current Water Year

This current water year of 1975-76 could serve to produce an overdraft situation worse than any experienced. In the first eight months of the water year, the rainfall at the Uvas and Chesbro Reservoirs was only 32% of their respective 12 year averages. If this trend continues through the spring months, there will be no rise in the levels of the reservoirs. This means that instead of the average annual yield of 13,900 AF for the two reservoirs, there would be much less. (At the end of the past growing season, the two reservoirs contained approximately 9,000 AF.) Also, if the present lack of rain continues, the natural ground water replenishment could be diminished by as much as 50%. The farmers would also increase their irrigation this spring.

This trend toward an overdraft may be observed by comparing the depth-to-water. This year's peak was reached in January, being 10 feet below the peak reached in April 1975. The depth to water in February was 15 feet below the previous February. This is not, however, as low as that experienced for the corresponding months in the 71-72 water year.

ANNUAL OVERDRAFT: Ensuing Water Year

At this time it appears the ensuing water year will begin well below that level which was present at the start of the current year. This could then mean even additional overdraft if the ensuing year yields below normal rainfall. Even if normal rainfall is experienced for the ensuing year, there will most probably still be an accumulated overdraft present. This assumption is based on the records from the 71-72 water year. It took 2 years with above average rainfall to recover to the water levels of 70-71.

It should also be realized that as the population continues to grow and more orchards are turned to row-crop use, the volume of water used will continue to increase. This continued increase will be evident in the continuation of an overdraft situation unless and until additional sources of water are found.

SUPPLEMENTARY WATER:

At this time there is no financial responsibility for the District to purchase supplementary water. The District has no source of supplementary water for the ensuing water year. The only supplementary water foreseen to be available is the upcoming San Felipe Project. However, this will not become available until the early 1980's.

Since all the water impounded by the District is percolated into the ground water for subsequent pumping by the city or public, there are at this time no surface delivery requirements for the District.